

UNCLASSIFIED

AD NUMBER

AD845844

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited. Document partially illegible. NATO.

FROM:

Distribution authorized to U.S. Gov't. agencies and their contractors; Foreign Government Information; DEC 1968. Other requests shall be referred to SACLANTCEN, Spezia, ITALY. NATO.

AUTHORITY

sACLANTCEN, ltr, 8 jul 1970

THIS PAGE IS UNCLASSIFIED

NATO UNCLASSIFIED

AD845844

Technical Report No. 130

MILOC 65:

A MULTI-SHIP OCEANOGRAPHIC SURVEY IN THE EASTERN NORTH ATLANTIC

FILE COPY  
SACLANT ASW  
RESEARCH CENTRE

VOLUME 5

TRACK CHARTS AND SUMMARY OF PHASES - SOUTHERN REGION

by

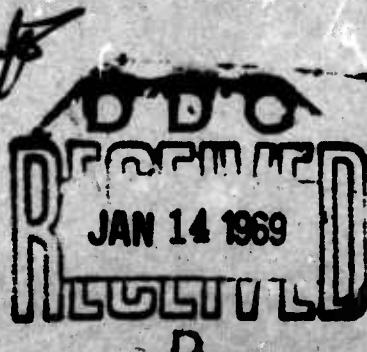
A. DAHNE

15 DECEMBER 1968

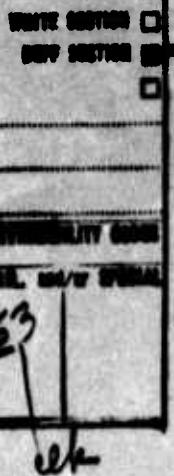
NATO

VIALE SAN BARTOLOMEO, 60  
I-19026-LA SPEZIA, ITALY

Requests for permission to reproduce the contents of this document, either wholly or in part, except in official NATO publications, should be addressed to the Director, SACLANTCEN. Normal NATO security regulations apply if this document is classified.



NATO UNCLASSIFIED



This document is released to a NATO Government at the direction of the SACLANTCEN subject to the following conditions:

1. The recipient NATO Government agrees to use its best endeavours to ensure that the information herein disclosed, whether or not it bears a security classification, is not dealt with in any manner (a) contrary to the intent of the provisions of the Charter of the Centre, or (b) prejudicial to the rights of the owner thereof to obtain patent, copyright, or other like statutory protection therefor.
2. If the technical information was originally released to the Centre by a NATO Government subject to restrictions clearly marked on this document the recipient NATO Government agrees to use its best endeavours to abide by the terms of the restrictions so imposed by the releasing Government.

14 TR-130-Vol-5

NATO UNCLASSIFIED

9

TECHNICAL REPORT NO. 130

18 Jun - 2 Aug 65

SACLANT ASW RESEARCH CENTRE  
Viale San Bartolomeo 400  
I 19026 - La Spezia, Italy

6

MILOC 65:

A MULTI-SHIP OCEANOGRAPHIC SURVEY IN THE EASTERN NORTH ATLANTIC.

VOLUME 5.

TRACK CHARTS AND SUMMARY OF PHASES - SOUTHERN REGION.

By

10

A. Dahme

11

15 Dec 68

12

26p.

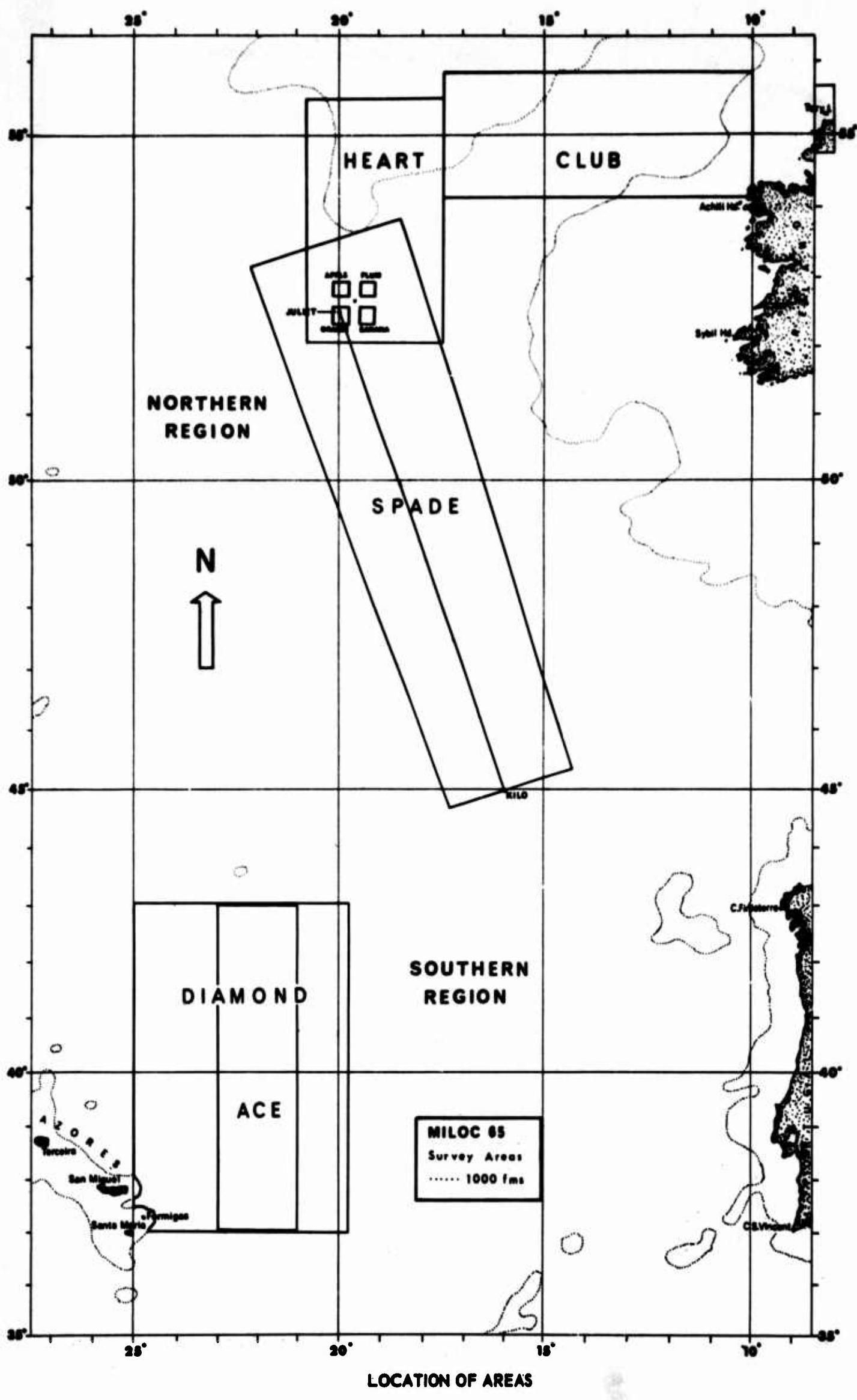
APPROVED FOR DISTRIBUTION

*M. W. van Batenburg*

Ir. M.W. van Batenburg  
Director

NATO UNCLASSIFIED

312950



**TABLE OF CONTENTS**

	<u>Page</u>
<b>ABSTRACT</b>	1
<b>INTRODUCTION</b>	2
1. <b>SUMMARY OF PHASES: SOUTHERN REGION</b>	3
1.1 <b>Phase G</b>	3
1.2 <b>Phase H</b>	5
1.3 <b>Phase I</b>	6
<b>REFERENCES</b>	16

**List of Figures**

1. <b>Phase G - Track Chart, Area Study</b>	7
2. <b>Phase G - Track Chart, Time Variation Study</b>	8
3. <b>Phase H - Track Chart, Laps 1 and 8</b>	9
4. <b>Phase H - Track Chart, Laps 2 and 3</b>	10
5. <b>Phase H - Track Chart, Laps 4 and 5</b>	11
6. <b>Phase H - Track Chart, Laps 6 and 7</b>	12
7. <b>Phase I - Track Chart, Laps 1 and 3</b>	13
8. <b>Phase I - Track Chart, Lap 2</b>	14
9. <b>Phase I - Track Chart, Lap 4</b>	15

MILOC 65:

A MULTI-SHIP OCEANOGRAPHIC SURVEY IN THE EASTERN NORTH ATLANTIC

Volume 5

TRACK CHARTS AND SUMMARY OF PHASES — SOUTHERN REGION

By

A. Dahme

ABSTRACT

A NATO oceanographic survey was conducted in two regions of the eastern North Atlantic during the period 18 June - 2 August 1965. The data collected are presented in a series of volumes, of which this is one. The initial distribution of these volumes has been limited to organizations directly interested in the data analysis.

## INTRODUCTION

The general description of the MILOC 65 survey is contained in Ref. 1. The present volume comprises a summary of the phases covering areas ACE and DIAMOND, located NE of the Azores (see frontispiece), as well as the track charts for the ships participating in those phases. The master track charts are drawn to the scale of 1 : 750 000, ref. 40°N. This scale has been expanded to 1 : 500 000 for the small area surveyed during the Time Variation Studies.

In single-ship operations the tracks provided by the individual ships have been accepted and only obvious errors have been corrected. In operations where more than one ship was used the positions have been cross-checked with the mutual radar information and the original plots of the ships have been corrected where necessary.

## 1. SUMMARY OF PHASES: SOUTHERN REGION

The general programme as outlined in the Operation Plan is summarized in Ref. 1, paragraph 2.3. The following is a detailed description of the different phases of the survey as available from the ships' logbooks. It reviews the main purpose of each phase, and explains the information shown on the track charts. All times are given in GMT.

### 1.1 Phase G

The purpose of this phase was to study the water structure of area DIAMOND by means of conventional oceanographic cast data. The participating ships were OWEN and ORIGNY. They started the survey at 1300Z on 24 June, at station G 13, and then proceeded independently, OWEN taking casts down to a maximum depth of 500 m, and ORIGNY down to the bottom. BT dips were made between casts, by OWEN at intervals of approximately 10 n.mi., and by ORIGNY at intervals of approximately 20 n.mi. OWEN completed the survey by 1330Z on 1 July, and ORIGNY at about 2130Z on 9 July.

After completion of the area survey ORIGNY sailed to station B 10 (approximate position  $38^{\circ}30'N$   $24^{\circ}15'W$ ) to commence the Time Variation Study at 0030Z on 10 July. This was completed at 0145Z on 12 July, after two circuits.

The navigation of both ships was supported by LORAN A.

The track chart of the area survey is shown in Fig. 1. It includes the following information:

Positions and designations of the cast stations.

Consecutive cast numbers; the numbering is independent for each ship.

Position of BT dips with selected BT numbers.

Dates and selected times at which BT dips were made.

Lap 1 and Lap 2 of the Time Variation Study are shown in Fig. 2. The pattern to be followed by the ship, starting at the SW corner, was similar to that shown for squares APPLE and ORANGE in Fig. 4 of Ref. 1, but the sides of the square were 20 n.mi and the time scheduled to complete one circuit was 24 hours. Casts were taken at the corners and in the middle of the squares. The maximum depth of these casts was 500 m. BT dips were made every 5 n.mi.

In addition Fig. 2 indicates:

The location of the BT dips and oceanographic casts.

The consecutive numbers of the oceanographic casts.

Selected consecutive numbers of BT's.

The date and hour at which each circuit (lap) started; this starting time coincides with the first BT, taken at the SW corner of the square.

## 1.2 Phase H

This was a supplement to Phase G.

The Portuguese ship SALVADOR CORREIA surveyed two station lines of area DIAMOND and made a Time Variation Study around a square centred on Station E 7.

She started her survey at 1800Z on 24 June, at station A 11. While underway to station E 7 she stopped at stations B 10, C 9 and D 8 to take casts with a maximum depth of 500 m. BT dips were made approximately every 15 n.mi during this run.

After finishing station E 7 she commenced her Time Variation Study. The pattern to be followed was again similar to that of Fig. 4 of Ref. 1. The sides of the square were 15 n.mi and the time for completion of one circuit was 24 hours. Casts were taken at each corner and in the middle of the square with a maximum depth of 300 m. BT dips were scheduled with each cast and at distances of approximately 3.25 n.mi. However, owing to pressure of time these dips were made to a less rigid schedule.

After completing six circuits - designated Lap 2 to Lap 7 - SALVADOR CORREIA continued the area survey (Lap 8) on a line parallel to the previous one, taking measurements similar to those made during Lap 1. She finished her survey at 0100Z on 4 July, after completing station B 12.

Figure 3 gives the track chart for Lap 1 and Lap 8 with the same additional information as contained in Fig. 1.

Figures 4 to 6 show Lap 2 to Lap 7 of the Time Variation Study. They contain the same information as shown in Fig. 2.

The navigation of the ship was supported by LORAN A.

### 1.3 Phase I

This phase was designed to study the temperature structure of area ACE, with three ships steaming on parallel courses and making BT dips every half-hour. The participating ships, from East to West, were CORTE REAL, JOÃO DE LISBOA, DIOGO CÃO.

In addition to taking BT data, JOÃO DE LISBOA streamed a GEK and followed the procedure laid down in paragraph 4.3 of Ref. 1. Although the two other ships did not have GEK equipment they followed the same procedure for the sake of uniformity.

The survey started at 1200Z on 25 June, with Lap 1. The ships' tracks were laid out in such a way that the outside tracks were repeated and Lap 4 coincided with Lap 1.

JOÃO DE LISBOA and CORTE REAL finished the survey at 1700Z on 3 July. DIOGO CÃO continued the measurements until 0830Z on 4 July, along the track previously surveyed by JOÃO DE LISBOA.

Figures 7-9 give the track charts for the different laps. Navigation was supported by LORAN A. In addition the three ships were in continuous radar contact while steaming on parallel courses, taking distances and bearings every 15 minutes.

The track charts contain:

The dates.

BT locations and selected BT numbers.

There was a break from 1600Z to 2300Z on 28 June, while all three ships were taking part in a rescue action.

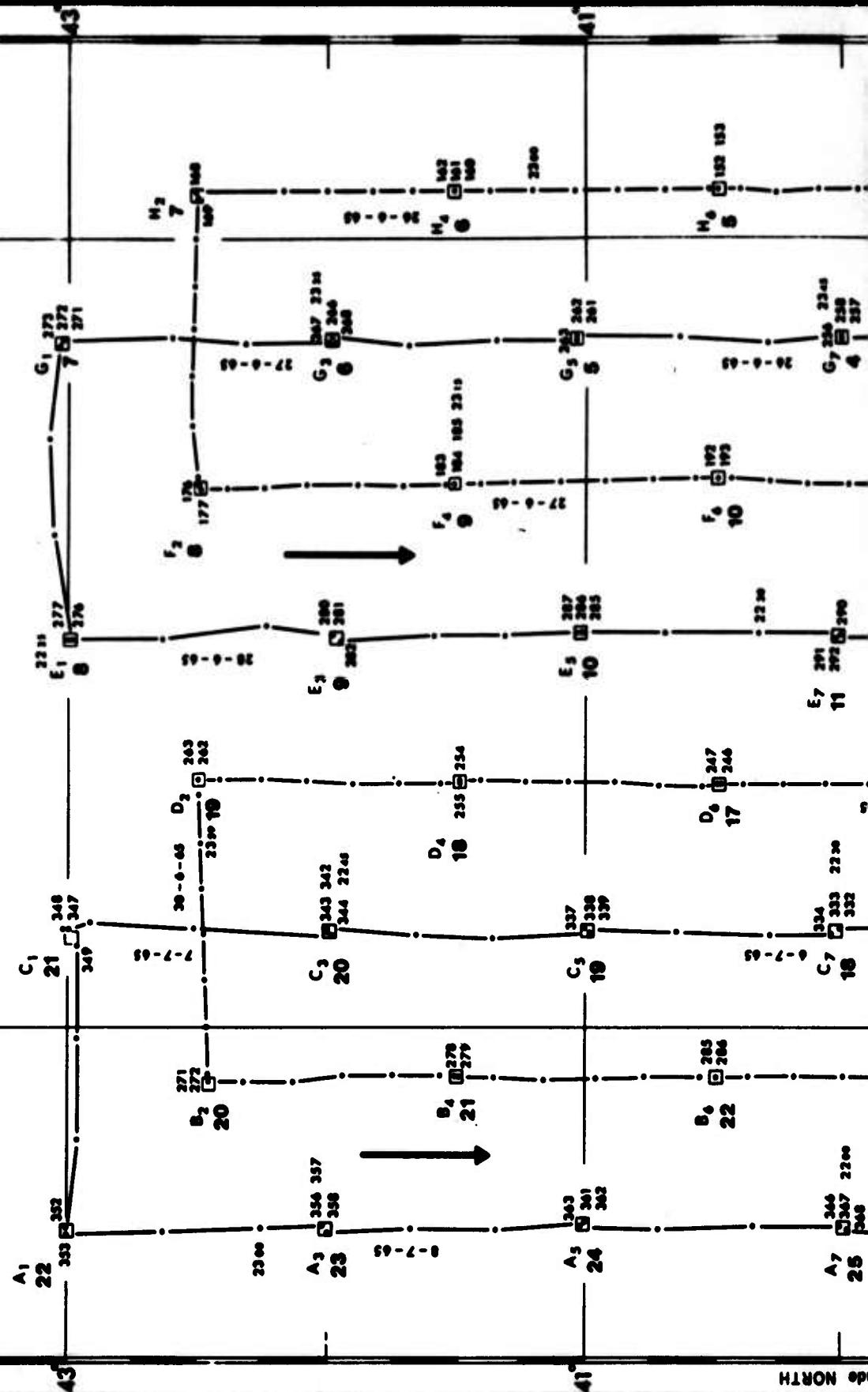
# MILLOC 65 Phase G

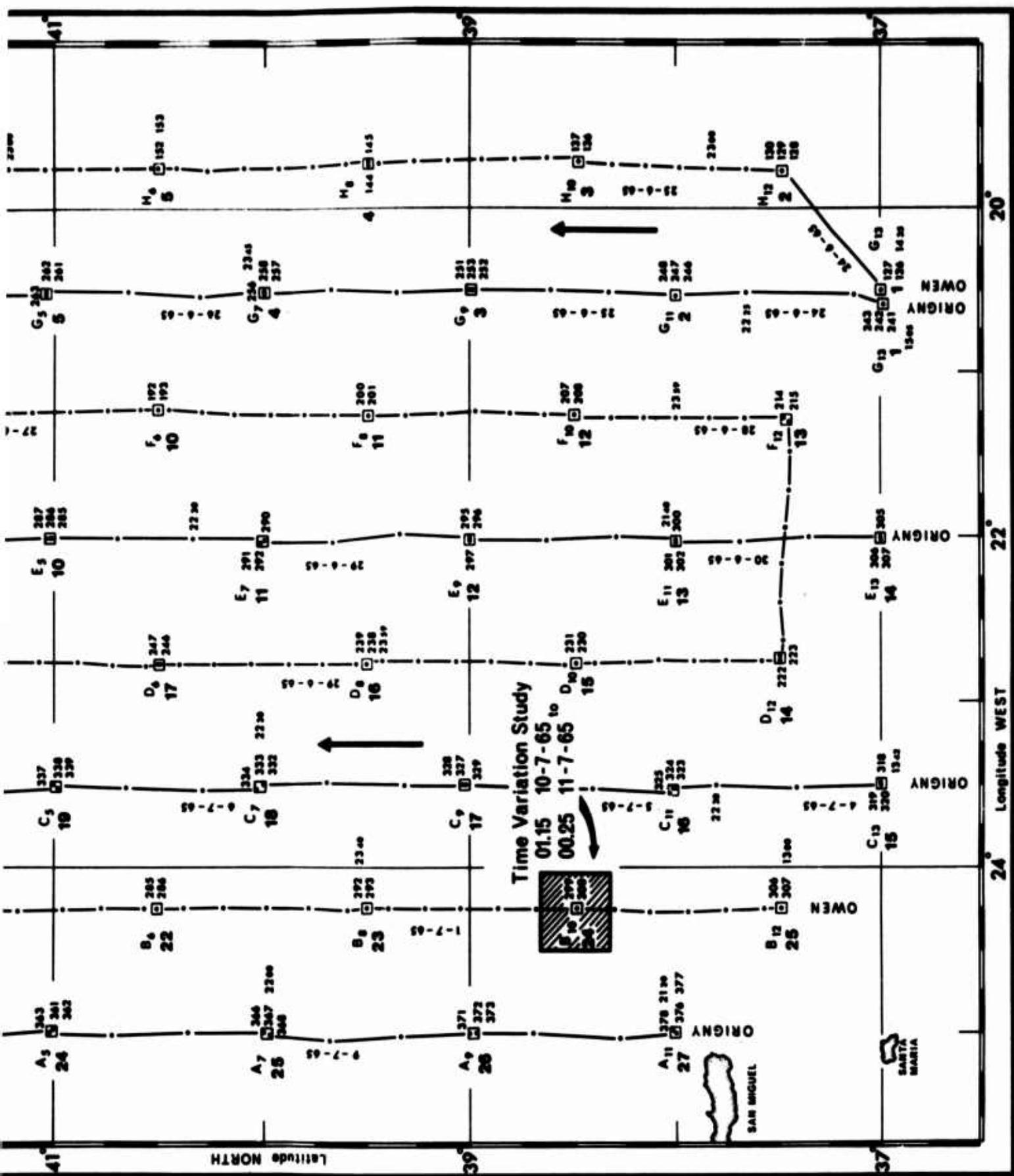
## TRACK CHART

REFERENCE

- BT (with selected consecutive numbers)
- Cast
- G Cast station designation
- 1 Consecutive cast numbers
- 2330 time, GMT

G13 Cast station designation  
1 Consecutive cast numbers  
2330 time, GMT





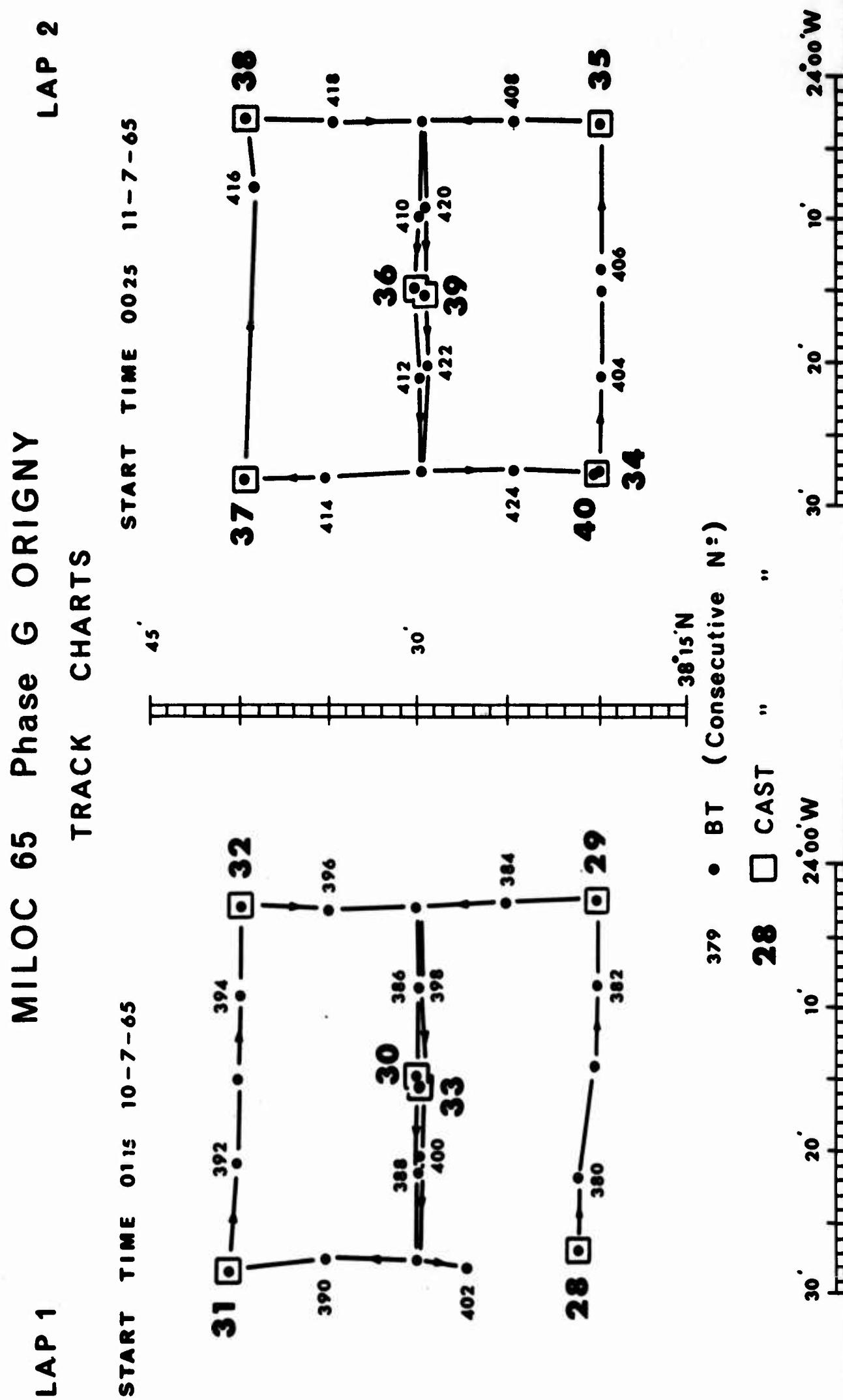
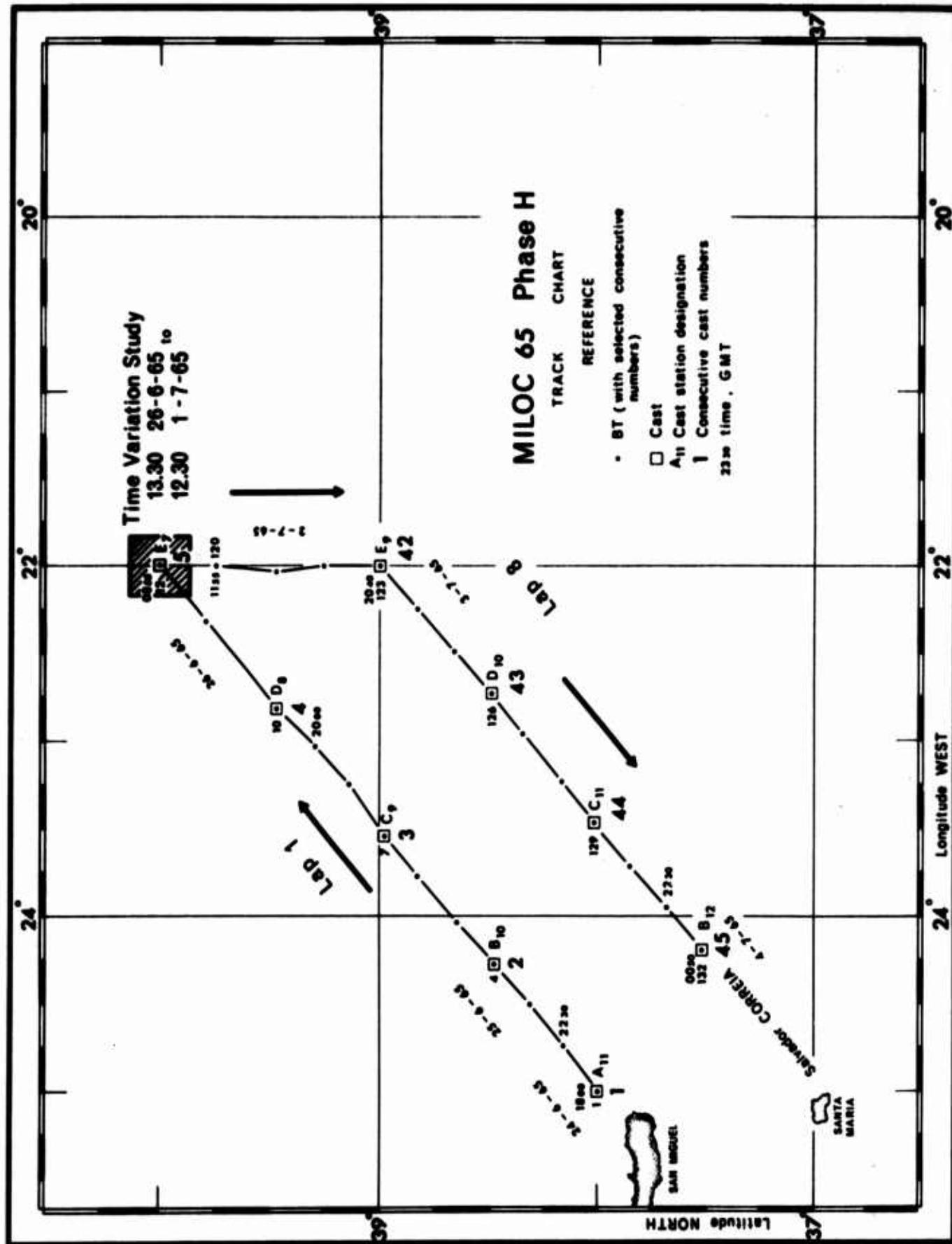


FIG. 2 PHASE G - TRACK CHART, TIME VARIATION STUDY



**FIG. 3 PHASE H - TRACK CHART, LAPS 1 AND 8**

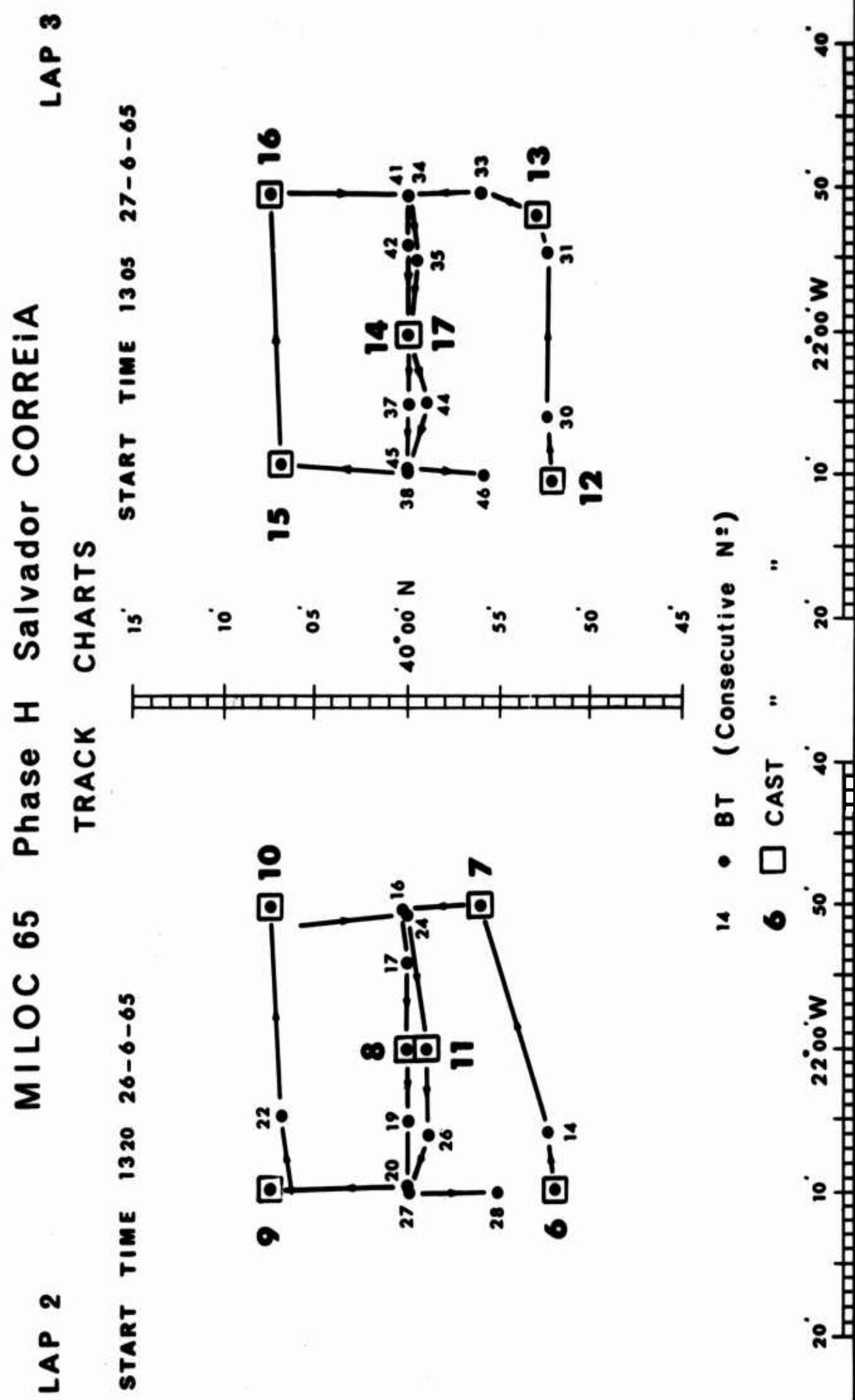


FIG. 4 PHASE H - TRACK CHART, LAPS 2 AND 3

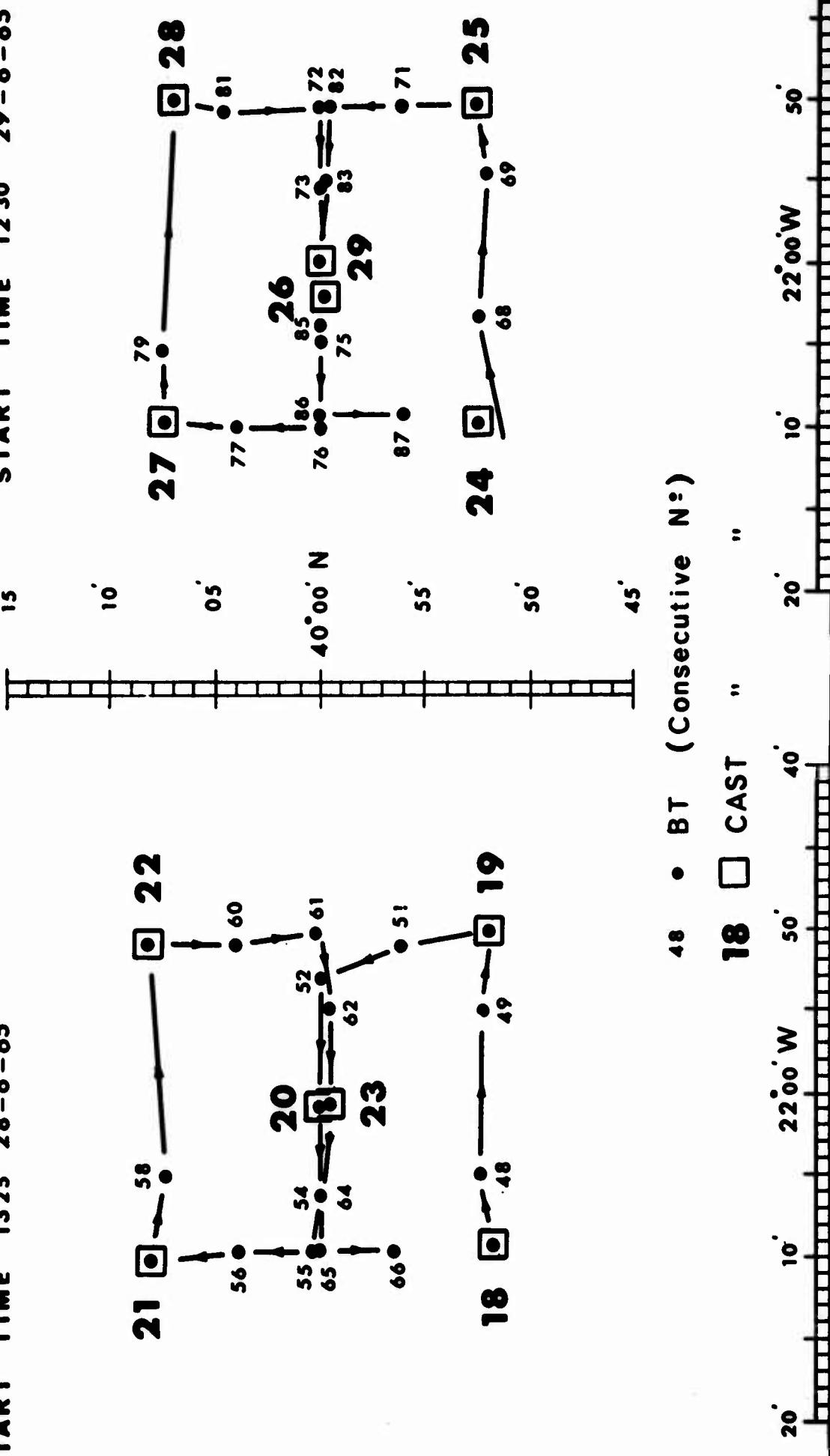
LAP 4

## MILLOC 65 Phase H Salvador CORREIA

## TRACK CHARTS

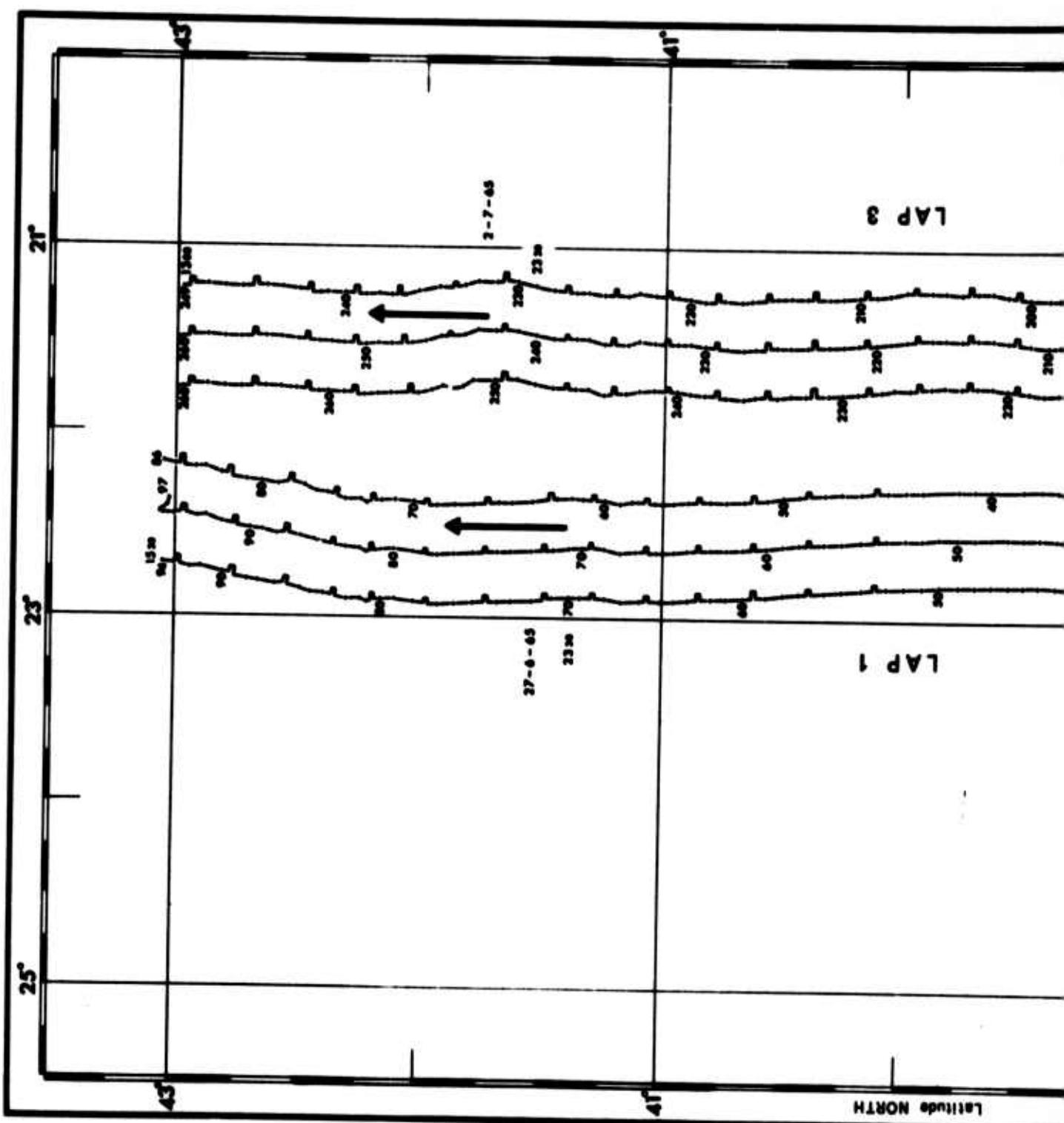
**START TIME** 1325 28-6-65

**START TIME** 12 30 29 - 6 - 65



**FIG. 5 PHASE H - TRACK CHART, LAPS 4 AND 5**





1

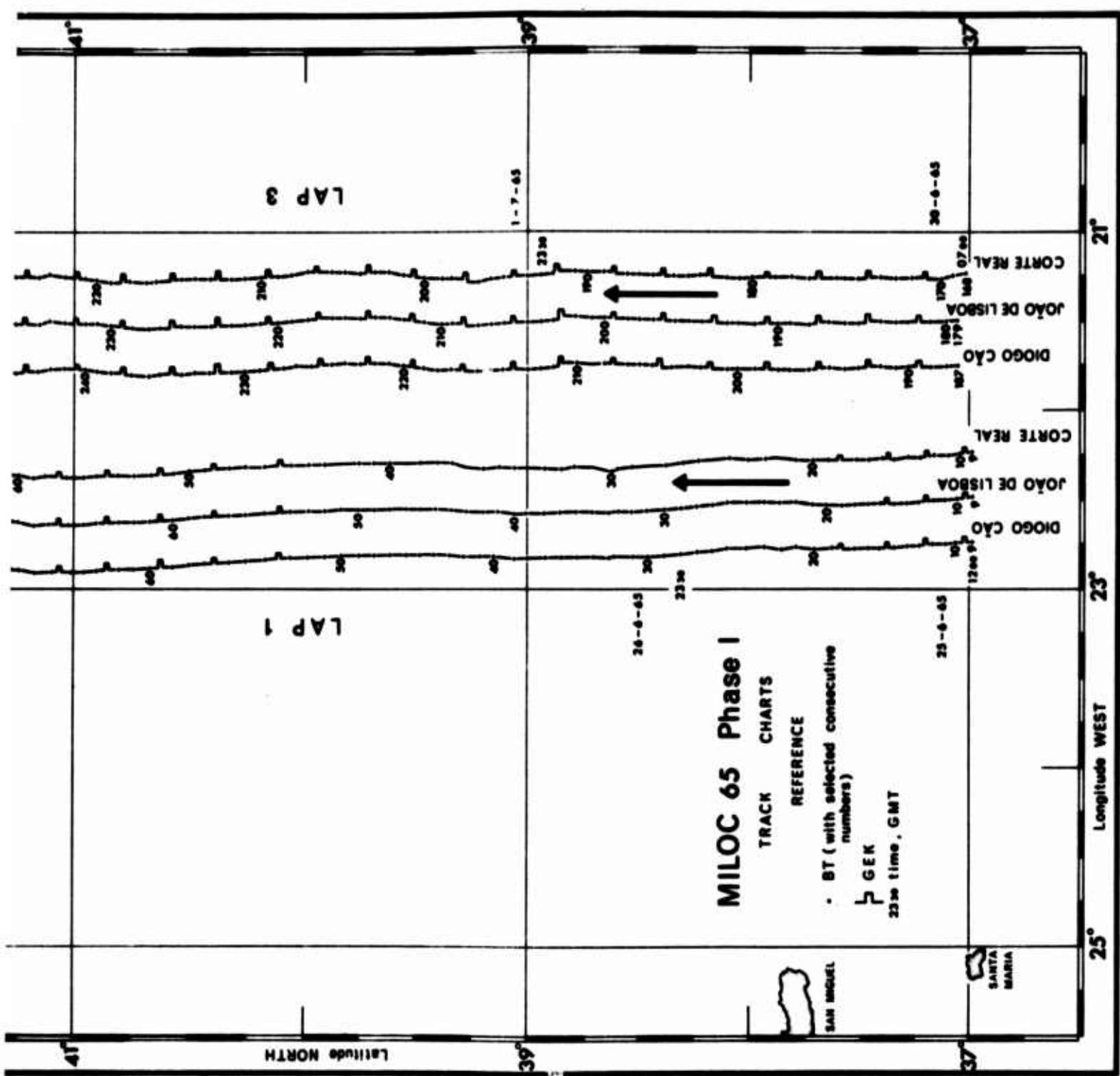
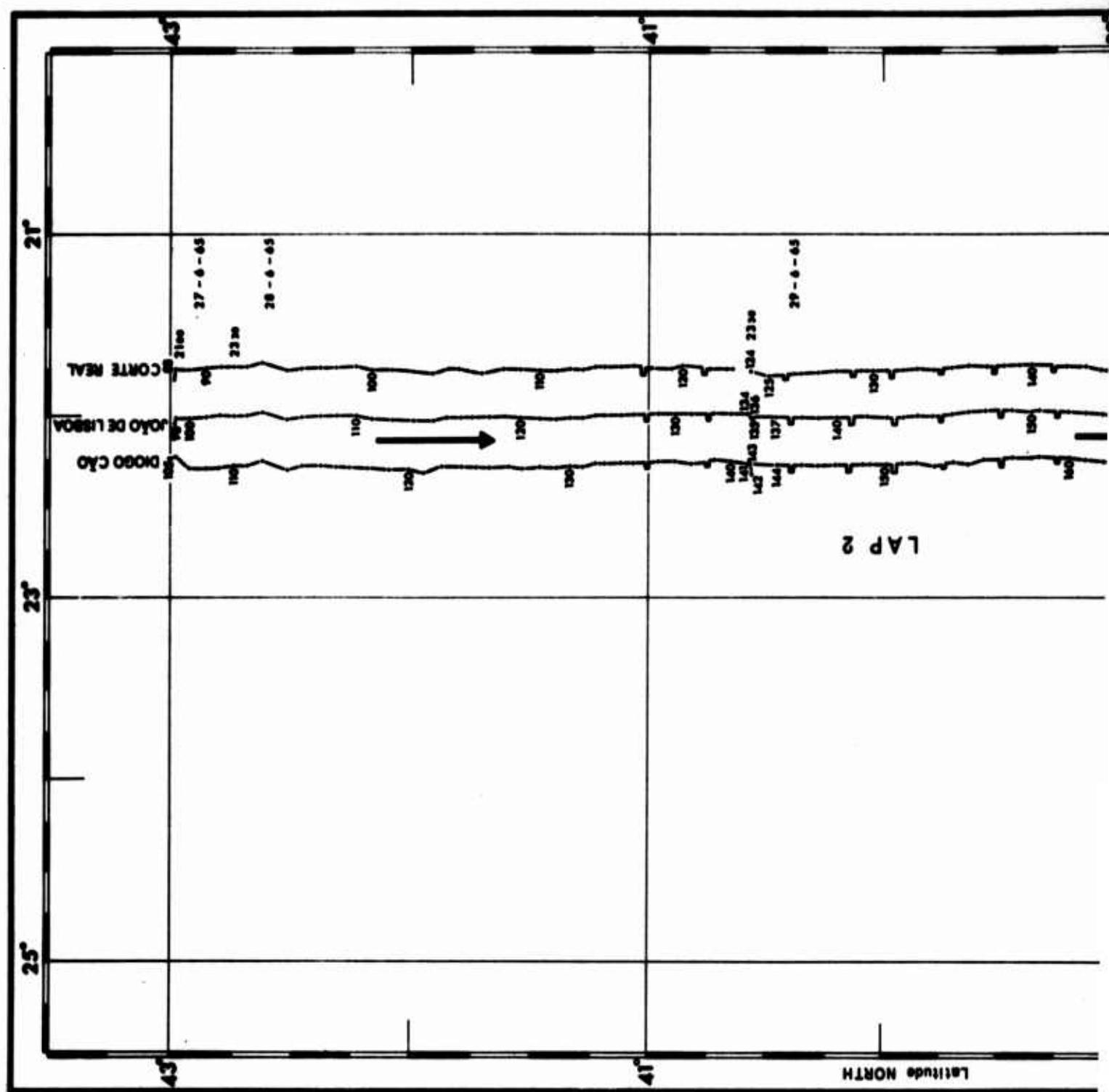


FIG. 7 PHASE I - TRACK CHART, LAPS 1 AND 3





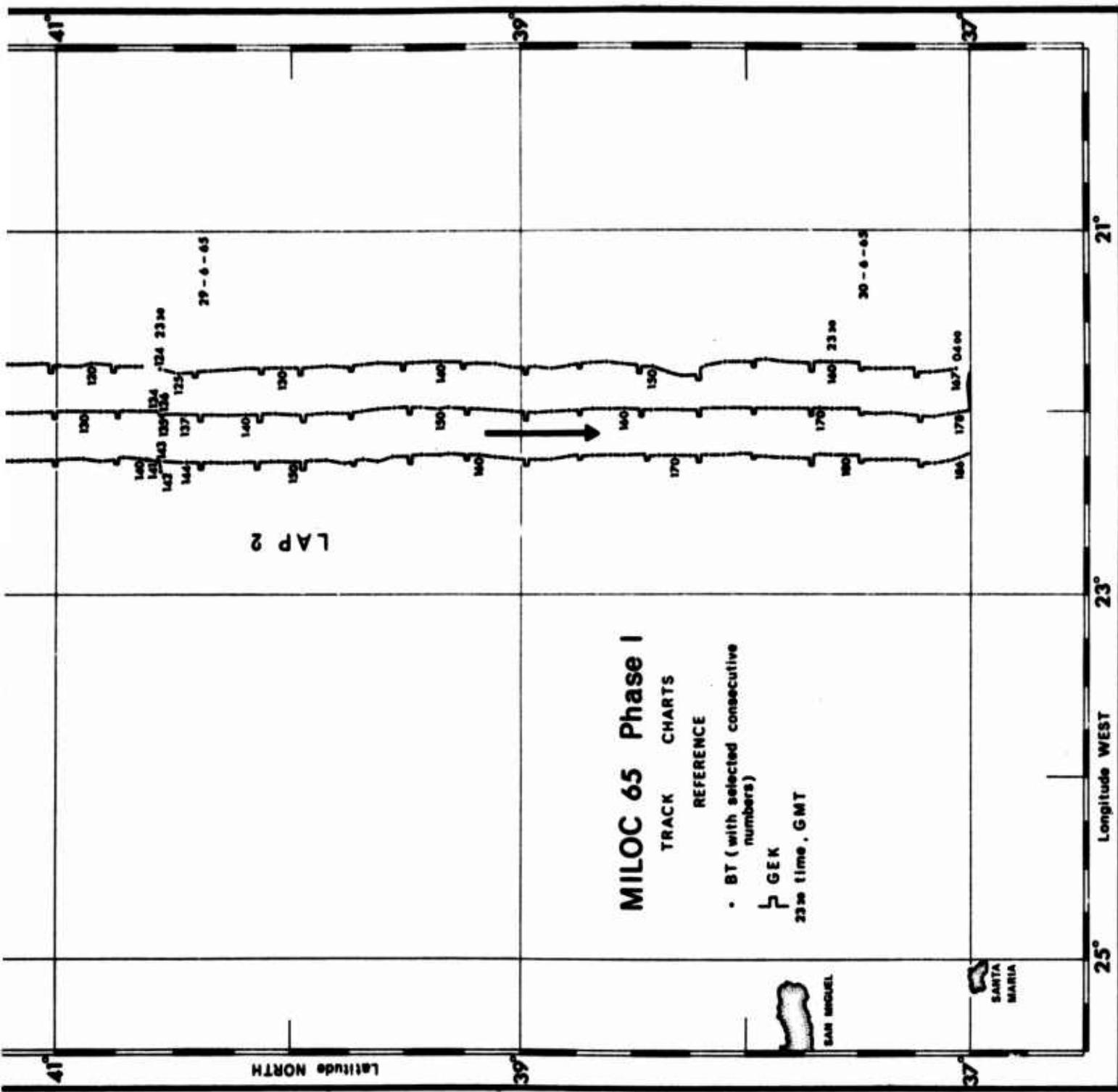
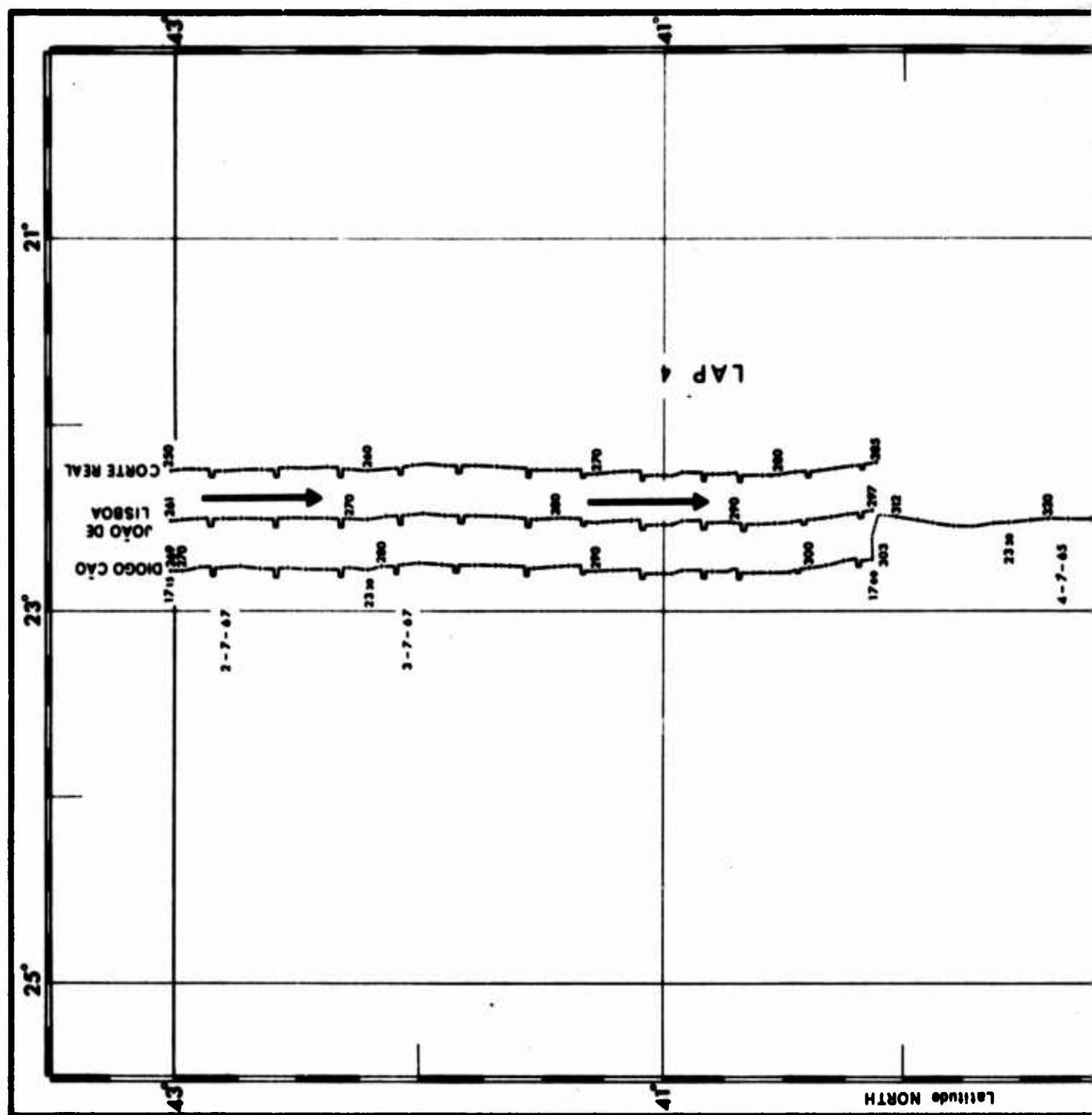


FIG. 8 PHASE I - TRACK CHART, LAP 2

2



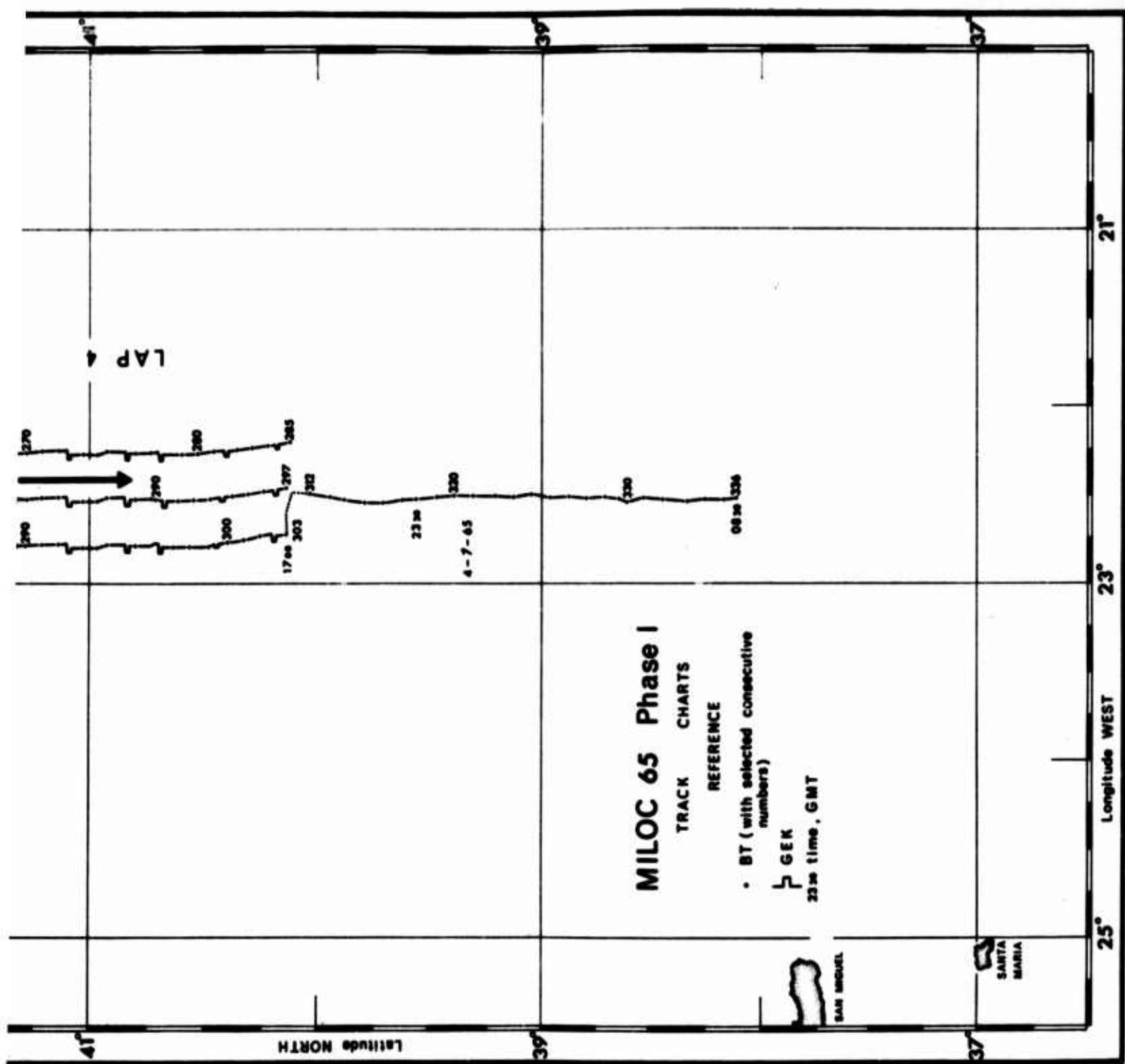


FIG. 9 PHASE I - TRACK CHART, LAP 4



REFERENCES

1. **A. Dahme, "MILOC 65: A Multi-Ship Oceanographic Survey in the Eastern North Atlantic, Vol. 1: Description and Location of the Measurements", SACLANTCEN Technical Report No. 109, NATO UNCLASSIFIED.**